Notice of Allowability	Application No.	Applicant(s)	
	10/527,424	IDO, JUN	
	Examiner	Art Unit	
	RuiMeng Hu	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *6/20/2007*.

2. ☒ The allowed claim(s) is/are *1-5 and 7-18*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Allowable Subject Matter

1. **Claims 1-5 and 7-18** are allowed.

2. The following is an Examiner's statement of reasons for allowance:

Consider **claim 1,** the best prior art of record found during the examination of the present application, **Abe et al. (JP 06-303171)** in view of **Yamamoto (US Patent 6151372)** fail to specifically disclose, teach, or suggest selecting one of the demodulated signals output from the demodulation paths, combining the demodulated signals output from the plurality of demodulation paths with predetermined gains, and outputting either the selected demodulated signal or the combined demodulated signal responsive to a power ratio comparison.

Abe et al. disclose a diversity receiver comprising (figure 1): a plurality of demodulation paths (figure 1, receive sections 2 and 12) for demodulating received signals and outputting demodulated signals; a power ratio comparator (receiving level ratio judging section 22) for calculating a power ratio from a first power corresponding to a first received signal on one of the demodulation paths (RSSI 1) and a second power corresponding to a second received signal on another one of the demodulation paths (RSSI 2), and comparing the power ratio (level ratio judging section 25) with a predetermined threshold value (threshold store 26); a signal selector (control section 8, switch 6) for selecting one of the signals output from the plurality of demodulation paths and outputting the selected signal; an equal-gain signal combiner (synthetic section 5) for combining the signals output from the plurality of demodulation paths with

predetermined gains, and outputting a combined signal (control section 8, switch 7); and a signal output unit for outputting one of the signals, either the selected signal or the combined signal, responsive to a result of the comparison in the power ratio comparator (control section 8, switches 6 and 7) (paragraphs 0006, 0007 and 0010, figures 1 and 2).

In the same field of endeavor, Yamamoto discloses a diversity receiver comprises a channel characteristic estimating section that uses a reference signal contained in the received signal for channel characteristic estimation (column 4 lines 6-13).

Abe et al. disclose selecting one of the phase contrast signals output from the paths, combining the phase contrast signals output from the plurality of paths, and outputting either the selected phase contrast signal or the combined phase contrast signal responsive to a power ratio comparison. This teaching clearly differs from the claimed invention; therefore, claims 1-5 and 7-12 of the present application are considered novel and non-obvious over the prior art and, consequently, are allowed.

Consider **claim 13,** the best prior art of record found during the examination of the present application, **Abe et al. (JP 06-303171)** in view of **Kuroda (US Patent 6603961)** further in view of **Miyanaga et al. (US Pub. # 2002/0168039)** fail to specifically disclose, teach, or suggest selecting one of the demodulated signals output from the demodulation paths, combining the demodulated signals output from the plurality of demodulation paths with predetermined gains, and outputting either the

selected demodulated signal or the combined demodulated signal responsive to a power ratio comparison, and the power ratio comparator uses the power control signal and said number of errors or said error rate in comparing the power ratio with the predetermined threshold value.

Abe et al. clearly disclose a diversity receiver comprising (figure 1): a plurality of demodulation paths (figure 1, receive sections 2 and 12) for demodulating received signals and outputting demodulated signals; a power ratio comparator (receiving level ratio judging section 22) for calculating a power ratio from a first power corresponding to a first received signal on one of the demodulation paths (RSSI 1) and a second power corresponding to a second received signal on another one of the demodulation paths (RSSI 2), and comparing the power ratio (level ratio judging section 25) with a predetermined threshold value (threshold store 26); a signal selector (control section 8, switch 6) for selecting one of the signals output from the plurality of demodulation paths and outputting the selected signal; an equal-gain signal combiner (synthetic section 5) for combining the signals output from the plurality of paths with predetermined gains, and outputting a combined signal (control section 8, switch 7); and a signal output unit for outputting one of the signals, either the selected signal or the combined signal, responsive to a result of the comparison in the power ratio comparator (control section 8, switches 6 and 7) (paragraphs 0006, 0007 and 0010, figures 1 and 2).

In the same field of endeavor, Kuroda clearly discloses a gain detector that outputs a power control signal corresponding to a gain adjustment quantity for adjusting said first power to a predetermined power level (figure 3, column 3 lines 14-30); an

estimated power value calculator (figure 3, 106.sub.1) that outputs an estimated power corresponding to a result of channel characteristic estimation using a reference signal contained in the first received signal (figure 3, a signal received by antenna 101.sub.1 is processed through elements 102.sub.1, 103.sub.1 and 105.sub.1 before being calculated by received power detecting device 106.sub.1).

In the same field of endeavor, Miyanaga et al. clearly disclose a pre-combination error correction unit (figure 1, error detector 12a, error corrector 14a) that outputs a number of errors or an error rate obtained as a result of error correction of the demodulated signal output from said one of the demodulation paths before it is input to the demodulated signal output unit (figure 1, paragraph 0056).

Abe et al. clearly disclose the power ratio comparator (figure 2, comparator 25) uses the estimated power (RSSI1 and RSSI2) in comparing the power ratio with the predetermined threshold value (threshold a). This teaching clearly differs from the claimed invention; therefore, claim 13 of the present application is considered novel and non-obvious over the prior art and, consequently, is allowed.

Consider **claim 14,** the best prior art of record found during the examination of the present application, **Abe et al. (JP 06-303171)** in view of **Kuroda (US Patent 6603961)** further in view of **Miyanaga et al. (US Pub. # 2002/0168039)** and **Tomiyoshi et al. (US Patent 6628733)** fail to disclose selecting one of the demodulated signals output from the demodulation paths, combining the demodulated signals output from the plurality of demodulation paths with predetermined gains, and outputting either the

selected demodulated signal or the combined demodulated signal responsive to a power ratio comparison, and the power ratio comparator uses the power control signal, the number of errors or the error rate output from the pre-combination error correction unit, and the number of errors or the error rate output from the error correction unit in comparing the power ratio with the predetermined threshold value.

Abe et al. clearly disclose a diversity receiver comprising (figure 1): a plurality of demodulation paths (figure 1, receive sections 2 and 12) for demodulating received signals and outputting demodulated signals; a power ratio comparator (receiving level ratio judging section 22) for calculating a power ratio from a first power corresponding to a first received signal on one of the demodulation paths (RSSI 1) and a second power corresponding to a second received signal on another one of the demodulation paths (RSSI 2), and comparing the power ratio (level ratio judging section 25) with a predetermined threshold value (threshold store 26); a signal selector (control section 8, switch 6) for selecting one of the signals output from the plurality of demodulation paths and outputting the selected signal; an equal-gain signal combiner (synthetic section 5) for combining the signals output from the plurality of demodulation paths with predetermined gains, and outputting a combined signal (control section 8, switch 7); and a signal output unit for outputting one of the signals, either the selected signal or the combined signal, responsive to a result of the comparison in the power ratio comparator (control section 8, switches 6 and 7) (paragraphs 0006, 0007 and 0010, figures 1 and 2).

In the same field of endeavor, Kuroda clearly discloses a gain detector that outputs a power control signal corresponding to a gain adjustment quantity for adjusting said first power to a predetermined power level (figure 3, column 3 lines 14-30); an estimated power value calculator (figure 3, 106.sub.1) that outputs an estimated power corresponding to a result of channel characteristic estimation using a reference signal contained in the first received signal, as said first power (figure 3, a signal received by antenna 101.sub.1 is processed through elements 102.sub.1, 103.sub.1 and 105.sub.1 before being calculated by received power detecting device 106.sub.1).

In the same field of endeavor, Miyanaga et al. clearly disclose a pre-combination error correction unit (figure 1, error detector 12a, error corrector 14a) that outputs a number of errors or an error rate obtained as a result of error correction of the demodulated signal output from said one of the demodulation paths before it is input to the demodulated signal output unit (figure 1, paragraph 0056).

In the same field of endeavor, Tomiyoshi et al. clearly disclose an error correction unit (figure 2, reception signal quality measuring unit 10) that outputs a number of errors or an error rate obtained as a result of error correction of the demodulated signal output from the demodulated signal output unit (figure 2, column 6 lines 20-23).

Abe et al. clearly disclose the power ratio comparator (figure 2, comparator 25) uses the estimated power (RSSI1 and RSSI2) in comparing the power ratio with the predetermined threshold value (threshold a). This teaching clearly differs from the claimed invention; therefore, claim 14 of the present application is considered novel and non-obvious over the prior art and, consequently, is allowed.

Consider **claim 15,** the best prior art of record found during the examination of the present application, **Abe et al. (JP 06-303171)** in view of **Yamamoto (US Patent 6151372)** and **Miyanaga et al. (US Pub. # 2002/0168039)** fail to specifically disclose, teach, or suggest selecting one of the demodulated signals output from the demodulation paths, combining the demodulated signals output from the plurality of demodulation paths with predetermined gains, and outputting either the selected demodulated signal or the combined demodulated signal responsive to a power ratio comparison.

Abe et al. disclose a diversity receiving method including a plurality of demodulating processes for demodulating a received signal and outputting a demodulated signal (figure 1), comprising the steps of: calculating a power ratio from a first power corresponding to a first received signal in one of the demodulation processes (RSSI1) and a second power corresponding to a second received signal in another one of the demodulation processes (RSSI2), and comparing the power ratio with a first predetermined threshold value (figure 2, level ratio judging section 25, threshold store section 26); selecting one of the signals output from the plurality of demodulation

processes and outputting the selected signal (control section 8, switch 6, paragraph 0009); combining the signals output from the plurality of demodulation paths with predetermined gains (synthetic section 5), and outputting a combined signal (control section 8, switch 7, paragraph 0010); and outputting one of the signals, either the selected signal or the combined signal, responsive to a result of the comparison in the step of calculating (paragraphs 0009 and 0010, figures 1 and 2) and results of the comparisons in the step of counting pre-combination errors.

In the same field of endeavor, Yamamoto clearly discloses a diversity receiver comprises a channel characteristic estimating section that uses a reference signal contained in the received signal for channel characteristic estimation (column 4 lines 6-13).

In the same field of endeavor, Miyanaga et al. clearly disclose a pre-combination error correction unit (figure 1, error detector 12a, error corrector 14a) that outputs a number of errors or an error rate obtained as a result of error correction of the demodulated signal output from said one of the demodulation paths before it is input to the demodulated signal output unit (figure 1, paragraph 0056).

Abe et al. disclose selecting one of the phase contrast signals output from the paths, combining the phase contrast signals output from the plurality of paths, and outputting either the selected phase contrast signal or the combined phase contrast signal responsive to a power ratio comparison. This teaching clearly differs from the claimed invention; therefore, claims 15-16 of the present application are considered novel and non-obvious over the prior art and, consequently, are allowed.

Consider **claim 17,** the best prior art of record found during the examination of the present application, **Abe et al. (JP 06-303171)** in view of **Miyanaga et al. (US Pub. # 2002/0168039)** fail to specifically disclose, teach, or suggest selecting one of the demodulated signals output from the demodulation paths, combining the demodulated signals output from the plurality of demodulation paths with predetermined gains, and outputting either the selected demodulated signal or the combined demodulated signal responsive to a power ratio comparison.

Abe et al. disclose a diversity receiver comprising (figure 1): a plurality of demodulation paths (figure 1, receive sections 2 and 12) for demodulating received signals and outputting demodulated signals; a power ratio comparator (receiving level ratio judging section 22) for calculating a power ratio from a first power corresponding to a first received signal on one of the demodulation paths (RSSI 1) and a second power corresponding to a second received signal on another one of the demodulation paths (RSSI 2), and comparing the power ratio (level ratio judging section 25) with a predetermined threshold value (threshold store 26); a signal selector (control section 8, switch 6) for selecting one of the signals output from the plurality of demodulation paths and outputting the selected signal; an equal-gain signal combiner (synthetic section 5) for combining the signals output from the plurality of demodulation paths with predetermined gains, and outputting a combined signal (control section 8, switch 7); and a signal output unit for outputting one of the signals, either the selected signal or the combined signal, responsive to a result of the comparison in the power ratio comparator

(control section 8, switches 6 and 7) (paragraphs 0006, 0007 and 0010, figures 1 and 2).

In the same field of endeavor, Miyanaga et al. clearly disclose a pre-combination error correction unit (figure 1, error detector 12a, error corrector 14a) that outputs a number of errors or an error rate obtained as a result of error correction of the demodulated signal output from said one of the demodulation paths before it is input to the demodulated signal output unit (figure 1, paragraph 0056).

Abe et al. disclose selecting one of the phase contrast signals output from the paths, combining the phase contrast signals output from the plurality of paths, and outputting either the selected phase contrast signal or the combined phase contrast signal responsive to a power ratio comparison. This teaching clearly differs from the claimed invention; therefore, claims 17-18 of the present application are considered novel and non-obvious over the prior art and, consequently, are allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to:** Commissioner for Patents
P.O. Box 1450

Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RuiMeng Hu whose telephone number is 571-270-1105. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on 571-272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RuiMeng Hu
R.H./rh
June 25, 2007

EDAN ORGAD
PRIMARY PATENT EXAMINER
Edan Orgad 6/25/07